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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,712	04/16/2004	Clarence W. Karney	2677.AQUE.NP	9206

26986 7590 08/11/2005

MORRISS O'BRYANT COMPAGNI, P.C.
136 SOUTH MAIN STREET
SUITE 700
SALT LAKE CITY, UT 84101

EXAMINER	
MADSEN, ROBERT A	
ART UNIT	**PAPER NUMBER**
1761	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/825,712	KARNEY, CLARENCE W.	
	Examiner	Art Unit	
	Robert Madsen	1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1,2,6,7,10-14,16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry (US 5711980) in view of Traeder et al. (US 6803066 B2) and Smith et al. (US 6458398 B1) and Ecker (US 5806686).

3. Regarding claims 1, 6, 10, 12,and 14, Terry teaches a method of extending the self life of harvested products that involves the steps of delivering harvested products to a processing site, such as fruits and vegetables as recited in claim 10, subjecting the product to a first cleaning with chlorine, sorting followed by another cleaning with chlorine, packaging the product in containers, storing the packaged products at 35°F as recited claim 14, transporting the product for retail delivery, and delivering the product to retail sites. (Column 1, lines 5-50, Column 2, lines 3-34,Column 3, lines 4-10, Column 4, line 21 to Column 5, line 5). However, Terry is silent in teaching spraying, as recited in claim 12,an ozone and water mixture of 1.0-1.5 ppm ozone, as recited in claim 6, cleaning *in combination with* sorting and drying the product as recited in claim 1. Terry is also silent in teaching sanitized containers per se, testing the packaged products for levels of pathogens, and sanitized transport means per se.

4. Traeder et al. also teach a method of extending the shelf life of fruits and vegetables, and teach the conventional shelf life of a harvested product may be further extended by using an ozone/water mixture spray treatment. In particular, it is advantageous to use a cool mixture because it slows down product respiration (i.e. prolonging freshness) and ozone is more soluble in water at lower temperatures, with the preferred temperature being 65°F or less. Traeder et al. further teaches that one of the benefits of using ozone is that is allows for recycling the cooled sanitizing liquid, unlike chlorine, such that the cooling utility requirements are less than the conventional sanitizing liquids because the recycled portion provides some of the cooling action . Traeder et al. also teach drying the product after applying the ozone/water treatment (i.e. at least 75% of the liquid is removed) to further assist in increasing the shelf- life. Traeder et al. teach using 0.1-5 ppm ozone is effective (Abstract, Column 3, lines 35-40, Column 5, lines 10-31, Column 7, lines 25-60).

5. Smith et al. also teach an ozone/water sanitizing. Smith et al. teach it may be done by immersion or spraying and offers the advantages that is a quicker disinfectant (e.g. requires less contact time then chlorine), a more powerful oxidizing agent (i.e. which directly proportion to its ability to reduce microbial availability), a cold temperature sanitizing liquid (i.e. does not use heat that would adversely affects the flavor or texture), and a residue free sanitizer (i.e. does not have an adverse affect on the flavor) (Column 1, line 10 to Column 2, line 32). Smith et al. further teach using an ozone as part of a water mixture that is effective in the same ranges as taught by Traeder when sprayed onto the surface

of a harvested product: anywhere from 0.01 ppm to 50 ppm ozone and a temperature at 0-50°C (Column 2, line 35 to Column 3, line 20).

6. Ecker teaches a method of sorting harvested products, such as fruits and vegetables, that can send the product to a packaging step and offers the advantage that reduces capital/labor expenses and damages to the product found in other methods. Ecker also teaches the method also involves spraying a sanitizing liquid on the conveyor leading to the sorting device, the products and the sorting device itself in order to protect against costly contamination during sorting(Abstract, Column 1, line 52 to Column 2, line 11, Column 3, lines 31-35, Column 13, lines 6-40).

7. Therefore it would have been obvious to modify Terry and substitute a spray ozone/water mixture for the spray chemical system followed by a drying step since Traeder et al. teach an ozone water mixture sprayed onto a harvested product will extend the shelf life of a harvested product by not only cleaning, but sanitizing and Smith et al. teach the food industry has found that the ozone water mixture is a preferred sanitizing solution because it is more effective at reducing microbial availability, requires less contact time (i.e. spraying may thus be used instead of immersing the product in a bath), and does not adversely affect flavor or texture. It would have been further obvious to select a level of 1.0-1.5 ppm, depending on the particular product since Traeder et al. teaches a level of 0.1-5 ppm ozone is effective and selecting any particular range within the range taught by Traeder et al. would have depended on the type of product. It would have been further obvious to modify the method of Terry and *combine* the second

sanitizing step *with* sorting since Ecker teaches it is important to include spraying during sorting to protect against costly contamination during sorting and Ecker teaches a sanitizing/sorting method that is less costly and less prone to damage the products.

8. With respect to utilizing sanitized containers and transport means, it would have been obvious to one of ordinary skill in the art to utilize sanitized containers and transport means, since the purpose of Terry was to extend the shelf life of the sanitized harvested product. Selecting *non-sanitized* containers and transport means would have been counter-productive and would not have contributed to extending the shelf life.

9. With respect to testing the packaged products for levels of pathogens, it would have been obvious to one of ordinary skill in the art to test the packaged products for levels of pathogens, since it was notoriously well known that government regulators, such as the FDA and USDA, require food suppliers to test the level of pathogens of a packaged food product intended for retail in order to protect the consumer.

10. Regarding claim 2, Terry is silent in teaching testing the stored product for pathogen level prior to transporting to the sanitized transport means. However, it would have been obvious to one of ordinary skill in the art to test the stored products for levels of pathogens prior to transporting to the transport means, since it was notoriously well known that government regulators, such as the FDA and USDA, require food suppliers to test the level of pathogens of a packaged food product intended for retail in order to protect the consumer and it was also

notoriously well known to complete such tests at various points along the process, such as prior to transfer to the transport means, since contamination may occur at any point during the process and, if there is a contamination problem, this would assist in identifying the location of contamination for the manufacturer.

11. Regarding claim 7, Terry teaches the entire cleaning, sorting, grading, drying, package, and storage are all in an enclosed environment (Column 4, lines 45-62) , but are silent in teaching the enclosed environment is cleaned by diurnal application of water/ozone. However, Ecker teaches it is important to spray entire sections of processing equipment from feed conveyor to exit with a sanitizing liquid, in addition to the product itself, in order to protect against costly contamination during sorting (Abstract, Column 1, line 52 to Column 2, line 11, Column 3, lines 31-35, Column 13, lines 6-40). Therefore, it would have been obvious to further modify Terry and clean the entire enclosed environment with the ozone/water sanitizing liquid since it was notoriously well known that contamination of a food handling facility may occur at any point during the handling process and Ecker teaches not only is important to sanitize the product itself, but it is also important to sanitize the equipment handling the product in order to protect against costly contamination.

12. Regarding claims 11 and 16, Terry teaches the entire process and packaging steps are conducted at a consistent predetermined sanitizing liquid and room temperatures , which is 35°F for broccoli and cauliflower (Column 2, lines 16-20,Column 4, lines 45-62), but is silent in teaching 60-65°F. Traeder et

al. , who also teach cool sanitizing liquid treatment, teach fruit or vegetable treatment with ozone/water are preferably carried out liquid temperatures of 65°F or less, since ozone is more soluble at these temperatures (Column 7, lines 55-60). Therefore, to select any particular temperatures of the first cleaning and the packaging of 60-65°F would have depended on the particular harvested product being treated since Terry teaches it is preferred to treat and package the product at the same temperature and Traeder et al. teach ozone/water is preferably used at 65°F or less.

13. Regarding claim 13, modified Terry includes drying, but is silent in teaching any particular temperature up to 70-75°F. However, it would have been obvious to select any particular temperature for drying , depending on the particular air flow rate selected and the impact the temperature would have on the environmental temperature since evaporation is affected by temperature and air flow and Terry teach utilizing the same sanitizing and environment temperature throughout the process (Column 2, lines 16-20,Column 4, lines 45-62). However, it would a it was notoriously well known that government regulators, such as the FDA and USDA, require food suppliers to test the level of pathogens of a packaged food product intended for retail in order to protect the consumer.

14. Claims 3,9, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry (US 5711980) in view of Traeder et al. (US 6803066 B2) and Smith et al. (US 6458398 B1) and Ecker (US 5806686), as applied to claims

1,2,6,7,10-14,16 above, further in view of Alberte (US 6692696 B1) and Hand (US 2626855).

15. Terry is silent in teaching testing the product for pathogens following the delivery to the retail site as recited in claim 3, intermittently testing during processing from delivery to the processing facility to the purchase of the product as recited in claim 9. Terry is also silent in teaching testing the product pH, chlorine level, and/or redox potentials at the point of harvest to the point of retail, as recited in claim 17.

16. Alberte teaches it is a method of detecting pathogens and pH for food products, wherein the method may be used for quality assurance and quality control in the food industry (Column 17, lines 13-26, Column 30, lines23-30).

17. Hand teaches providing the consumer, retail site, and distributor with a spoilage indicators, such as pH changes or products of spoilage or purification, so that these individuals can test foodstuffs, such as fruits and vegetables without the need of test laboratories or relying on mere suspicion (Column 1, line 1 to Column 2, line 45 and Column 3, lines 53 to Column 4, line 21).

18. Therefore, it would have been obvious to one of ordinary skill in the art to intermittently test the products for levels of pathogens and pH , since (1) Alberte teaches a method that is used to test for pathogens and pH for the food industry for the purpose of quality control , (2) it was notoriously well known to take intermittent samples for testing for quality control, and (3) contamination with pathogens or a change in pH may occur at any point during the process and intermittent samples would assist in identifying the possible source of any

problem. It would have been further obvious to test at the retail site since Hand teaches it is considered preferred to test food at the retail site so that contamination or pH suspicions can be verified.

19. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terry (US 5711980) in view of Traeder et al. (US 6803066 B2) and Smith et al. (US 6458398 B1) and Ecker (US 5806686), further in view of Alberte (US 6692696 B1) and Hand (US 2626855) as applied to claims 3,9, and 17 above, further in view of DiSanto (US 5108590).

20. Terry is silent is silent in teaching contacting the product with water/ozone to assure pathogen free conditions.

21. DiSanto teaches spraying ozone/water on fruits and vegetables at a retail site because it is believed that the misting systems conventionally used to spray fruits and vegetables to maintain the appearance and weight introduce bacteria to the product's surfaces, and by spraying the fruits and vegetables with ozone/water bacterial contamination is prevented (Abstract, Column 1, lines 5-67). Therefore, it would have been obvious to modify Terry and spray an ozone/water mixture onto the product at the retail site since Terry teaches fruits and vegetables and DiSanto teaches misting systems conventionally used to spray fruits and vegetables at a retail location to maintain the appearance and weight introduce bacteria to the product's surfaces, and by spraying the fruits and vegetables with ozone/water bacterial contamination is prevented.

22. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terry (US 5711980) in view of Traeder et al. (US 6803066 B2) and Smith et al. (US 6458398 B1) and Ecker (US 5806686), as applied to claims 1,2,6,7,10-14,16 above, further in view of DiSanto (US 5108590)

23. Terry is silent is silent in teaching contacting the product with water/ozone to assure pathogen free conditions.

24. DiSanto teaches spraying ozone/water on fruits and vegetables at a retail site because it is believed that the misting systems conventionally used to spray fruits and vegetables to maintain the appearance and weight introduce bacteria to the product's surfaces, and by spraying the fruits and vegetables with ozone/water bacterial contamination is prevented (Abstract, Column 1, lines 5-67). Therefore, it would have been obvious to modify Terry and spray an ozone/water mixture onto the product at the retail site since Terry teaches fruits and vegetables and DiSanto teaches misting systems conventionally used to spray fruits and vegetables at a retail location to maintain the appearance and weight introduce bacteria to the product's surfaces, and by spraying the fruits and vegetables with ozone/water bacterial contamination is prevented.

25. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terry (US 5711980) in view of Traeder et al. (US 6803066 B2) and Smith et al. (US 6458398 B1) and Ecker (US 5806686), as applied to claims 1,2,6,7,10-14,16 above, further in view of Singh et al. (US 6549135 B2).

26. Terry teaches tracking the product and product information by bar code for each process step and then providing this data with the delivered product for transit to the delivery site (Column 4, line 21 to Column 5, line 5), but is silent in teaching it is monitored by a global positioning system that receives and transmit process/storage data product data in transit to the delivery site.

27. Singh et al. teach monitoring process/storage data during transit to notify location if the handling of the product from process to delivery has been within acceptable limits. Singh et al. teach the advantage is one can monitor the food from a main location an advise remote location on how to adjust the operating parameters to improve ,or prevent the deterioration of, the product quality. The system may use a cellular telephone for communication, which would utilize a global positioning system (Abstract, Column 1, line 10 to Column 2, line 18, Column 3, lines 5-52). Therefore, it would have been obvious to modify Terry and further include monitoring by a global positioning system that receives and transmit process/storage data product data in transit to the delivery site, since Terry teaches conveying product information to the retail site and Singh et al. teach monitoring by a global positioning system, such as a cellular phone, that receives and transmit process/storage data product data in transit to the delivery site offers the advantages that one can notify the delivery site if the product has been handled within acceptable limits and advise a remote site on how to adjust the operating parameters to improve ,or prevent the deterioration of, the product quality during process/storage/transit.

28. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terry (US 5711980) in view of Traeder et al. (US 6803066 B2) and Smith et al. (US 6458398 B1) and Ecker (US 5806686), as applied to claims 1,2,6,7,10-14,16 above, further in view of Dixon (US 3365307).

29. Regarding claim 15, Terry teaches a transport temperature of 35°F, but is silent in teaching a 38-47°F. However, it would have been obvious to select a temperature such as 38-47°F, depending on the level of oxygen in the transport means since Dixon teaches produce may be transported at 33-50°F, depending on oxygen level in the transport means(Column 7, lines 25-36).

30. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry (US 5711980) in view of the admission of the prior art and Smith et al. (US 6458398 B1) and Call et al. (US 6488900B1) and Singh et al. (US 6549135 B2).

31. Regarding claim 18, Terry teaches a method of extending the self life of fresh products that involves the steps of delivering fresh products to a processing site, such as fruits and vegetables, subjecting the product to a cleaning step, packaging the product in containers, storing the packaged products, transporting the product for retail delivery, and delivering the product to retail sites. Terry further teaches monitoring the facility conditions, since all of the process, packaging, storage, and transport areas are maintained at the same room conditions, such as temperature and humidity (Column 1, lines 5-50, Column 2, lines 3-34,Column 3, lines 4-10, Column 4, line 21 to Column 5, line 5).

However, Terry is silent in teaching the washing step uses ozone and water mixture used at a level sufficient to achieve 5-log reduction in pathogens , the room conditions are clean room conditions, testing the packaged products for levels of pathogens is below 5-log reduction, and the data form monitoring the facility and the test data are collected in a data collection system.

32. The admission of the prior art states current government standards for pathogen levels require a 5-log pathogen reduction to be effectively or essentially pathogen free.

33. Smith et al. teach sanitizing fresh products, such as fruit and vegetables, to eliminate pathogens. Smith et al. teach utilizing a ozone/water mixture offers several advantages over conventional sanitizers because its a quicker disinfectant (e.g. requires less contact time then chlorine), a more powerful oxidizing agent (i.e. which directly proportion to its ability to reduce microbial availability), a cold temperature sanitizing liquid (i.e. does not use heat that would adversely affects the flavor or texture), and a residue free sanitizer (i.e. does not have an adverse affect on the flavor). Smith et al. further teach a 4-log reduction within 2minutes at 3% ozone for bacterial spores and even a 6-log reduction for HIV (Column 1, line 10 to Column 2, line 32). Smith et al. further teach anywhere from 0.01 ppm to 50 ppm ozone and a temperature at 0-50°C (Column 2, line 35 to Column 3, line 20).

34. Call et al. teach that to prevent pathogens from contaminating food processing facilities it would be preferred to purify the air in processing and storage facilities (Column 1, line 60 to Column 2, line 20).

35. Singh et al. teach monitoring process/storage condition data as well as pathogen test data during transit to notify location if the handling of the product from process to delivery has been within acceptable limits. Singh et al. teach the advantage is one can monitor the food from a main location an advise remote location on how to adjust the operating parameters to improve ,or prevent the deterioration of, the product quality (Abstract, Column 1, line 10 to Column 2, line 18, Column 3, lines 5-52).

36. Therefore it would have been obvious to modify Terry and include a an ozone/water mixture and test for pathogenicity below a 5-log pathogen reduction since the government standards require a 5 log reduction in pathogens and Smith et al. teach the food industry has found that the ozone water mixture is a preferred sanitizing solution because it is more effective at reducing microbial availability, requires less contact time (i.e. spraying may thus be used instead of immersing the product in a bath), does not adversely affect flavor or texture, and would be capable of a 5 log reduction in pathogens, depending on the time and concentration. It would have been further obvious to include clean room conditions for the entire processing and transporting steps, since Terry teaches all of the steps are conducted under the same room conditions, the government requires a 5 log reduction in pathogens, and Call et al. teach utilizing clean room systems for food processing and storage facilities one can prevent pathogens from contaminating foods. Additionally, it would have been obvious to monitor the clean room conditions and pathogen test data, since Singh et al. teach by monitoring this type of data from processing to delivery one is able to advise a

particular location how to adjust the room condition or process parameters to improve, or prevent the deterioration of, the product quality.

37. Regarding claims 19 and 20, Terry teaches assuring that all of the environment conditions are the same throughout the process and transport steps and tracking the product and product information by bar code for each process step and then providing this data with the delivered product for transit to the delivery site (Column 4, line 21 to Column 5, line 5), but is silent in teaching it is monitored by a global positioning system that receives and transmits environmental conditions data product data in transit to the delivery site and transmitting data back to the processing facility.

38. Singh et al. teach the system may use a cellular telephone, an air borne device , for communication, which would utilize a global positioning system and be capable of transmitting information back to the facility (Abstract, Column 1, line 10 to Column 2, line 18, Column 3, lines 5-52).

39. Therefore, it would have been obvious to modify Terry and further include monitoring by a global positioning system that receives and transmit environmental conditions, since Terry teaches monitoring and assuring environmental conditions throughout the process and conveying product information to the retail site and Singh et al. teach monitoring by a global positioning system, such as a cellular phone, that receives and transmit process/storage data product data in transit to the delivery site offers the advantages that one can notify the delivery site if the product has been handled within acceptable limits and advise a remote site on how to adjust the operating

parameters to improve ,or prevent the deterioration of, the product quality during process/storage/transit.

Conclusion

40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Sands et al. (US 6817541 B2), Crisinel et al. (US 6514459 B1), Rubow et al. (US 5902619), Yousef et al. (US 6800315 B2), Gallo (US 5858435), and Nagy et al. (US 2339507) teach ozone/water mixture treatment of harvested products. Thomas Jr. et al. (US 6004604) and Brogden (US 1732180) teach conventional fresh produce cleaning and sorting.

41. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Madsen whose telephone number is (571) 272-1402. The examiner can normally be reached on 8:00AM-4:30PM M-F.

42. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

43. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert Madsen
Examiner
Art Unit 1761

RAM

Steve Weinstein
STEVE WEINSTEIN
PRIMARY EXAMINER
For M. Cano